

REMARKS

The Examiner, Mr. Berman, is thanked for the courtesy extended applicants attorney during the interview of July 24, 2008 in which the rejections as set forth in the office action dated February 14, 2008 were discussed as well as new claims 35 - 37, as presented in this amendment. Further, claim 5 has been amended to utilize "including" rather than "comprising" in relation to the location of the defect candidate.

The rejection of claims 3, 5, 6, 12 - 16 and 25 - 34 under 35 USC 103(a) as being unpatentable over Mizuno (US Patent No. 6,047,083) in view of Worster et al (US Patent No. 5,963,314) and the rejection of claims 10, 11 and 20 - 24 under 35 USC 103(a) as being unpatentable over Mizuno and Worster et al further in view of Gallarda et al (US Patent No. 6,539,106), such rejections are traversed insofar as they are applicable to the present claims and reconsideration and withdrawal of the rejections are respectfully requested.

At the outset, applicants note that as pointed out to the Examiner at the interview, while the Examiner contends that Worster et al provides a teaching in column 13, line 29, column 14, line 33, that a selected one of stored actual images is displayed together with the map format on the screen, which feature is not disclosed or taught by Mizuno, applicants submit that the features of the cited art are not properly combinable in that Worster et al utilizes different instruments to obtain the map format and the actual images and Mizuno also utilizes different instruments. The Examiner, at the interview, as reflected the Interview Summary indicates that "The Examiner did not find this persuasive because Mizuno et al teaches that the

same instrument can produce both the wafer map and defect images". (emphasis added). Applicants submit that the Examiner has mischaracterized the disclosures of Mizuno and Worster in relation to the claimed invention.

Turning first to Worster et al, as pointed out to the Examiner at the interview, column 14, lines 35 - 39 provide that "The Wafer Map Window displays the defect map of the wafer under inspection, the defect map having been produced by a wafer scanner that is not part of laser imaging system 100." (emphasis added). Further, as indicated in column 14, lines 40 - 42, "The operator can select a defect to revisit by, for instance, using a mouse to "point and click" in the defect". (emphasis added). Thus, it is apparent that the image displayed on the screen in Worster et al is not the image which is obtained by the same instrument when detecting defects to form the wafer map, as recited in the claims of this application and also, not the image stored in the memory, in that the image is obtained by revisiting the defect and imaging it.

In accordance with the present invention, the wafer map is formed based on the defect location data obtained by the same tool or instrument which takes the image of the defect. Looking to the features of independent claims 5, 6 and 16, applicants note that claim 5 recites the features of:

outputting an actual image of the extracted defect candidate and data including the location of the defect candidate via either a storage medium or a network;

storing said outputted actual image of the extracted defect candidate and data including the location of the defect candidate;

displaying on a screen in a map format, the defect candidate location data outputted via either set storage medium or network; and

displaying on said screen a selected one of the stored actual images of the extracted defect candidates which is designated on said screen among the extracted defect candidate data displayed in said map format on said screen so that the selected one of the stored actual

images is displayed together with said map format on said screen.
(emphasis added).

Claim 6 recites the features of:

outputting an actual image of the detected defect candidate and data including location information of the defect candidate;

storing said outputted defect candidate actual image and data including location information of the defect candidate in a memory;

displaying the stored defect candidate on a screen in map format; and

displaying on said screen a selected one of the actual images of the stored defect candidate stored in said memory which is designated on said screen among the defect candidate data displayed in said map format on said screen so that the selected one of the actual images is displayed together with said map format on said screen. (emphasis added).

Claim 16 recites the features of:

outputting an actual image of said detected defect candidate and data including location information of the defect candidate while carrying out the step of imaging said substrate and the step of detecting a defect candidate of said pattern;

storing said outputted actual image of said detected defect candidate and data including location information of the defect candidate in a memory; and

simultaneously displaying on a screen, said actual defect candidate image and data including the location information of the defect candidate stored in said memory;

wherein, in the step of simultaneously displaying, said defect candidate data of location information is displayed in a map format on said screen and said actual defect candidate image which is simultaneously displayed on said screen is a selected one of the stored actual images of the detected defect candidates stored in said memory, which is designated on said screen among the defect candidate data displayed in said map format on said screen.

As apparently recognized by the Examiner at the interview, Worster et al does not disclose or teach the aforementioned features. However, with

respect to Worster et al utilizing different instruments for displaying the wafer map and images of defects, "The Examiner did not find this persuasive because Mizuno et al teaches the same instrument can produce both the wafer map and defect images. Worster was cited for the teaching of a value in displaying both types of images on the same display." (emphasis added). Applicants submit that contrary to the position set forth by the Examiner, Mizuno also does not disclose the recited features of the independent claims and cannot be properly combined with Worster et al to provide the claimed features.

Looking to Mizuno, applicants note that as illustrated in Fig. 3 of Mizuno, the wafer map displayed is a map of points to be inspected obtained after an alignment process is performed, by comparing an optical microscopic image of the alignment pattern formed on the wafer with the reference image so that after alignment has been made, the wafer map (a map of points to be inspected) corresponding to the wafer is read out and displayed on the display, as seen in step (6) and as described in column 4, lines 26 - 40 of Mizuno. As described in column 4, lines 41 to column 5, line 7, after the wafer map has been displayed, and the point to be inspected has been specified, a relatively lowly magnified SEM image is formed and compared with a previously recorded reference SEM image to detect a defect and the pattern defects are classified into types of defects, and the classification of such defects are displayed on the wafer map, as illustrated in Fig. 6B. Thus, applicants submit that Mizuno also utilizes different tools for obtaining the wafer map, and also fails to form the wafer map based upon location data of

defects which are imaged and stored, in the manner as recited in independent and dependent claims of this application. Thus, applicants submit that the independent claims patentably distinguish over Mizuno and Worster et al, and the dependent claims recite further features of the present invention which are not disclosed or taught in the cited art, such that independent claims 5, 6 and 16 and the dependent claims patentably distinguish over Mizuno and Worster et al in the sense of 35 USC 103 and should be considered allowable thereover.

Furthermore, by the present amendment, new dependent claims 35 - 37, dependent respectively from independent claims 5, 6 and 16, have been presented further defining the feature that the map format of the defect candidate location data is displayed with a selected magnification of a variable magnification on the screen together with the selected one of the stored actual images, as described at page 14, lines 2 - 5 of the specification. Applicants note that with respect to this feature, the Examiner indicated that "The Examiner also did not consider new claim 35 claiming a change of the magnification of the wafer map to patentably distinguish over the prior art because zooming maps for better resolution is well known." Applicants submit that neither Mizuno or Worster et al disclose zooming of the wafer map, and as pointed out above, fail to disclose or teach the other recited features of the independent and dependent claims of this application, such that hereagain, applicants submit that the independent claims and the dependent claims including newly added dependent claims 35 - 37, recite features not disclosed

or taught by the cited art in the sense of 35 USC 103, such that all claims should be considered allowable thereover.

In view of the above amendments and remarks, applicants submit that all claims present in this application should now be in condition for allowance and issuance of an action of a favorable nature is courteously solicited.

To the extent necessary, applicants petition for an extension of time under 37 CFR 1.136. Please charge any shortage in the fees due in connection with the filing of this paper, including extension of time fees, to the deposit account of Antonelli, Terry, Stout & Kraus, LLP, Deposit Account No. 01-2135 (Case: 501.41125X00), and please credit any excess fees to such deposit account.

Respectfully submitted,

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